SERVICE MANUAL

COUNTER-TOP DISHWASHER

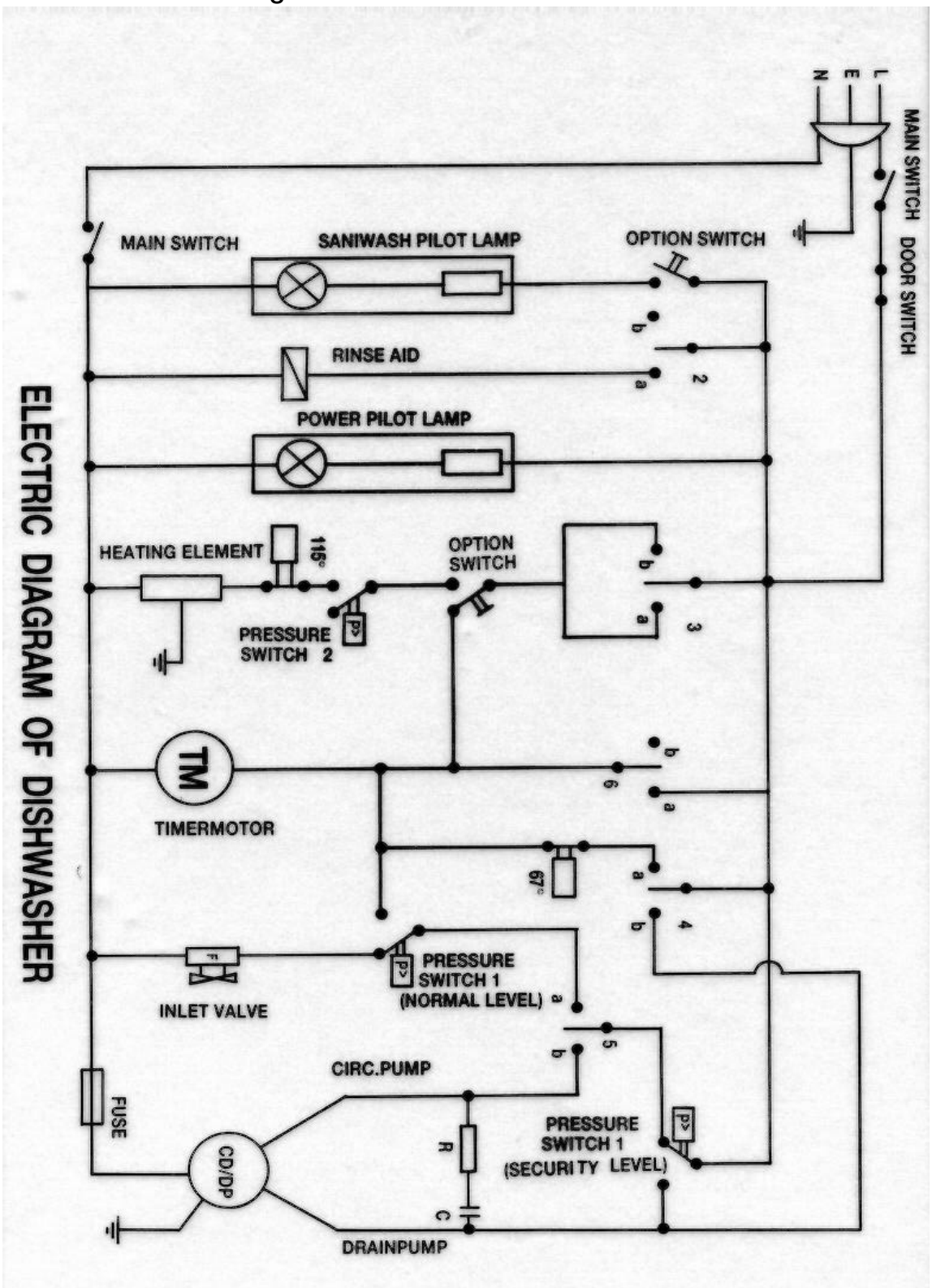
DDW398W,DDW399W

DANBY PRODUCTS LTD.
GUELPH, ONTARIO N1H6Z9

DANBY PRODUCTS INC.
FINDLAY, OH 45839

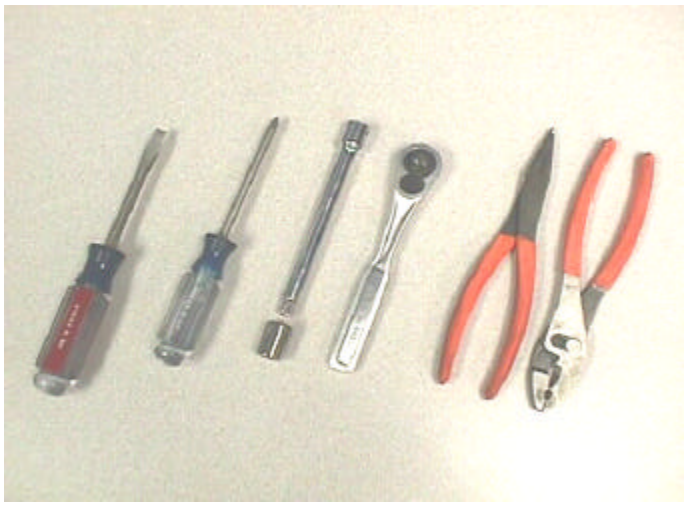
1. Circuit Diagram 1
2. Tools and Test Equipment 2
3. Troubleshooting 3
4. Performance Check: Loading 5
5. Performance Check: Detergent and Rinse Agent 7
6. Power Connections 8
7. Removing Outer Casing and Control Panel 9
8. Inner Wiring Connections Check 10
9. Door Latch Mechanical 11
10. Timer 12
11. Power Switch and Option Switch 15
12. Water Inlet Valve 16
13. Pressure Switches 18
14. Pump and Motor Assembly 19
15. Heating Element and Safety Thermostat 20
16. Normal Thermostat 21
17. Hose Connector 22
18. Rinse Agent Dispenser 23
19. Parts List 24
20. Exploded View 29

1.Circuit Diagram

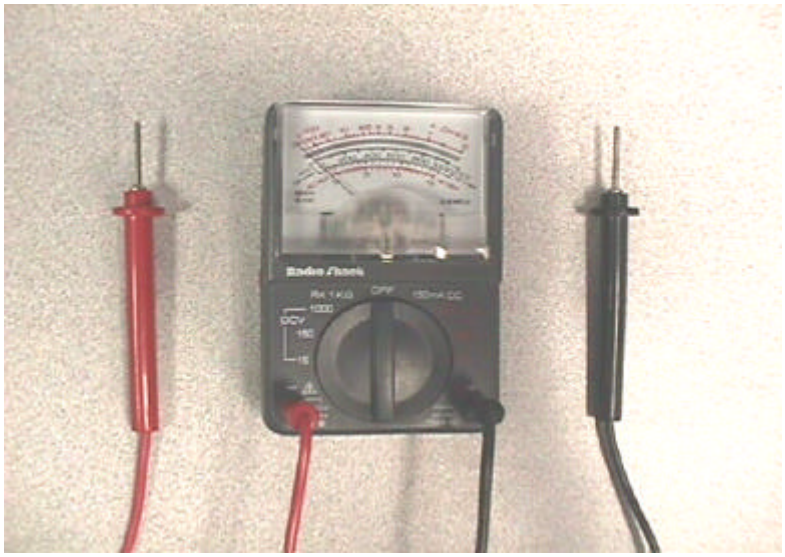


2. Tools and Test Equipment

Hand Tools



A basic compliment of hand tools i.e. flat and phillips head screw drivers, socket set, pliers and wire striper / crimping tool.



A basic volt ohm meter (VOM) will also be required for circuit and component testing.

3. Troubleshooting

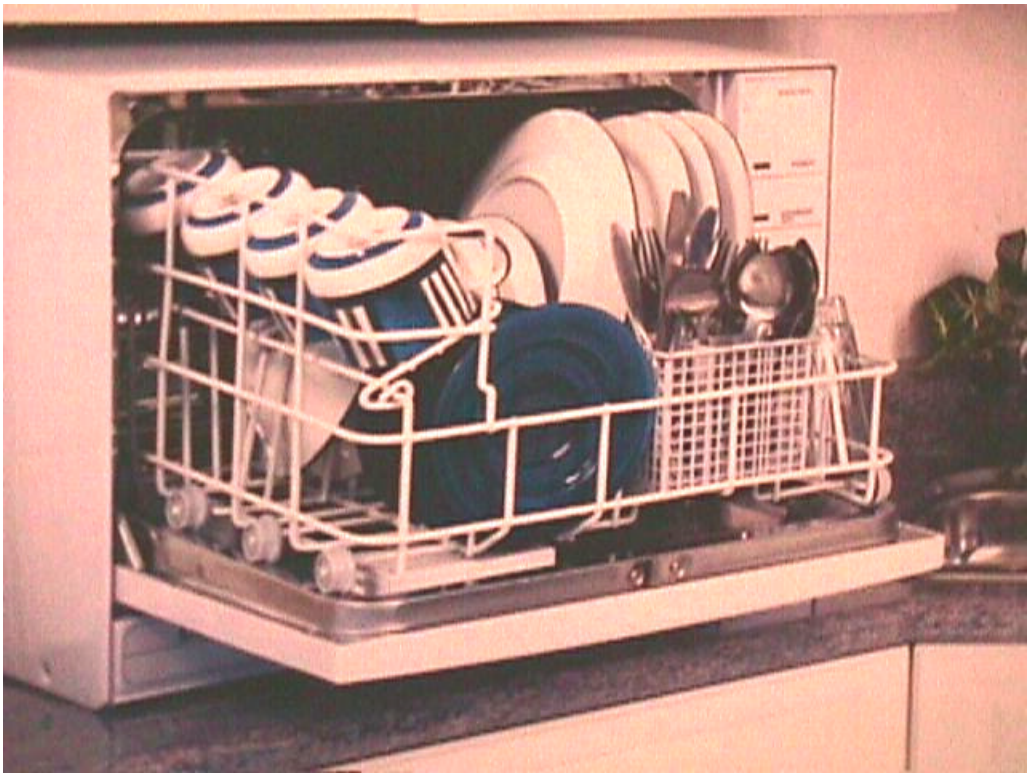
Problem	Possible Cause	Repair Procedure
1.Pump and timer do not run (power pilot is not illuminated)	Power receptacle defective	Check receptacle
	Power cord defective	Check power cord
	Open wire to timer	Check timer
	Open door latch switch	Check wiring and connection
	Power switch defective	Check option switch and power switch
2. Too little or no water fill	Kinked fill hose	Check inlet hose
	Low houes water pressure	check faucet
	Blocked inlet valve or faucet	Check inlet valve and faucet
	Open or defective pressure switch	See pressure switch
3. Water does not shut off	Pressure switch defective	See pressure switch
	water inlet valve stuck open	See inlet valve
4. Water pumping out before washing dishes.	Pressure switch defective	See pressure switch
5. Timer does not advance	Poor terminal connection on timer	See timer
	Defective timer	See timer
6. Water does not pump out	Drain hose kinked or blocked	Check drain hose
	Resistance or capacitance defect	See pump and motor assembly
7. Dishwasher leaks	Dishwasher not level	Adjust leveling legs
	Door not closing tightly	Adjust latch strike
	Crack in hose connection	Replace hose
	Gasket damaged	Replace gasket
	Inlet valve connector loose or defective	Check water inlet valve
	Loose connection between pump & sump	Reconnect using encapsulant
	Pump body damaged	Replace pump and motor assembly
	Pump seal defective	See pump and motor assembly
8. Detergent remains in detergent cup	Detergent is old and caked	See detergent and rinse agent
	Dishes block water from detergent cup	See loading dishes
	No or low water	See #2
9. Rinse agent dispenser does not release rinse agent	No rinse agent in dispenser	Check rinse agent level
	Solenoid inoperative	check rinse agent dispenser
	Open timer contacts	Check timer
10. Rinse agent dispenser leaks	Dispenser gasket defective	Replace gasket
	Dispenser tank cracked	Replace dispenser
11. Poor washing results	Improper loading	See loading dishes
	Detergent old, incorrect type or amount	See detergent and rinse agent
	Improper cycle selection	Choose proper cycle
	Kinked or cloged drain hose	Check drain hose
	Foreign material in wash system	Check wash system
	Foreign material in spray arm	Clean wash arm
	Rinse agent leaks into tub during wash	Replace dispenser
12. Poor drying	Rinse agent not used	Fill rinse agent dispenser
	heating unit inoperative	See heating element

Problem	Possible Cause	Repair Procedure
13. Condensation on door	Some condensation is normal	Cause- steam vent on door
14. Dishwasher door is difficult to open or close	Door gasket emersion	Pull gasket into slot
	Door linkage bent	See door latch assembly
	Door hook deflection	See door latch assembly
15. Noise during operation	Dishes rattling	See loading dishes
	Drain pump viberating	See pump and motor assembly
	Foreign object in pump	Check wash pump
16. Hose connector leaks	Silcon sleeve worn	See hose connectors
	Connector hose washer defective	Replace washer
	Connector gasket damaged	Replace connector gasket

4. Performance Check: Loading

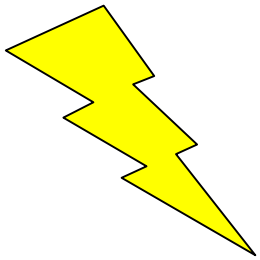
Many performance problems that commonly occur in dishwashers are not due to mechanical defects. Problems with poor washing results can often be resolved without making repairs.

The procedures in this manual are designed to help you eliminate performance problems before you begin checking and testing the dishwasher's components. To get the best results from the dishwasher it is necessary to form good loading habits. If the dishwasher seem to be running correctly, but does not get the dishes really clean, check to be sure it is being loaded properly. The owner's manual gives detailed instructions on this procedure.



PROCEDURE

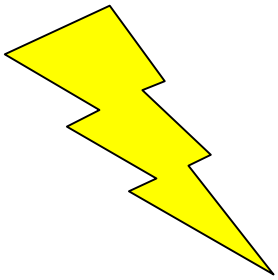
Loading dishwasher



5. Performance Check: Detergent and rinsing agent

Water and detergent are major factors for good dishwasher performance. Water pressure, hardness and temperature also play vital roles in getting good results. The correct detergent, in proper amounts, is equally important. The water hardness in your area will effect the amount of detergent needed to get clean dishes.

PROCEDURE
Checking detergent



Step 1: For personal safety always exercise caution when working with any electrical appliance..

Step 2: Only use detergent intended specifically for automatic dishwashers. Make sure the detergent is fresh and dry. Old, caked detergent will not wash well.

Step 3: This dishwasher has a rinse agent dispenser, make sure it is filled. The rinse agent makes the water flow off the dishes faster, this reduces spotting and aids drying.

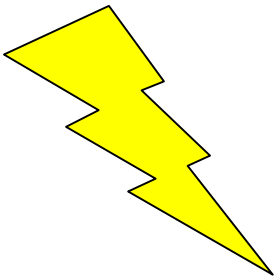
NOTE: Check with the local water company concerning the water conditions in your area. With very hard water more detergent may be required for good results. If you have soft water or a water softener, use less detergent.

6. Power Connections

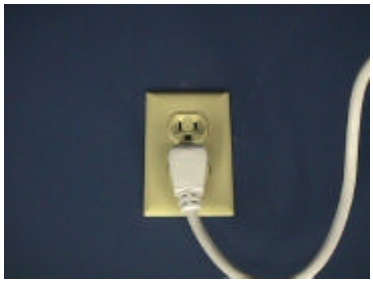
Dishwashers plug into standard 120 volt wall receptacles with a three pronged (grounded) plug. If the dishwasher fails to operate properly, the power cord may be preventing power from reaching the unit.
Most problems associated with the power cord or connection are caused by damage and/or loose connections and will likely be visible.

CAUTION: To minimize the possibility of electric shock, be certain that the wall receptacle and circuit are properly grounded before using the dishwasher. Use of a plug adapter to adapt to a two prong outlet is **NOT** recommended. Under no circumstances should you attempt to cut off or otherwise remove the third prong (ground prong) from the power cord..

PROCEDURE
Inspecting: Power Connections



Step 1: Be sure all dishwasher Controls are turned off



Step 2: Inspect power cord at connection to receptacle. Improper connection could be the sole cause of trouble.

Step 3: Pull plug from receptacle with a firm quick tug. Always grasp the plug, never pull the cord. Be careful Not to contact the blades of plug.

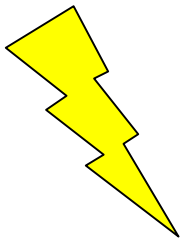
Step 4: Inspect plug carefully for Damaged, corroded or loose terminals. Look for signs of overheating around the molded portion. If plug is damaged replace the power cord.

Step 5: To replace cord, disconnect remove mounting screws on power cord strain relief . Disconnect internal connections and install new cord same as original. Reassemble dishwasher and check operation.

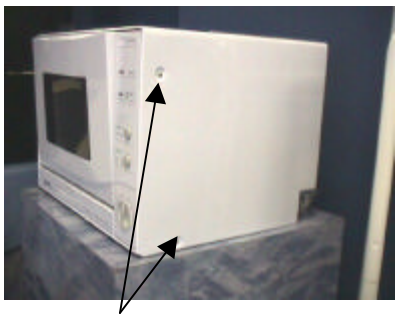
7. Removing Outer Casing And Control Panel

PROCEDURE

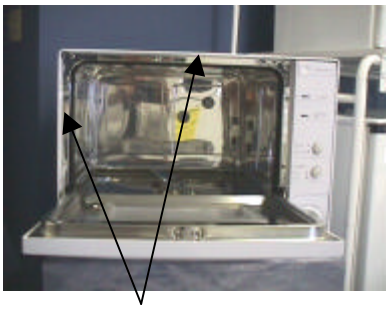
Removing outer case



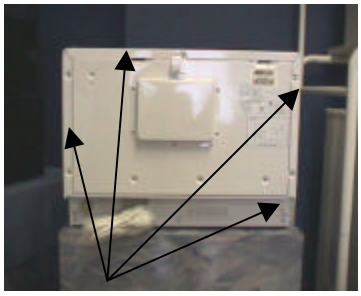
Step 1: For your personal safety exercise caution when working with any electrical appliance.



Step 2:Remove stainless--steel screws on both sides of outer casing.

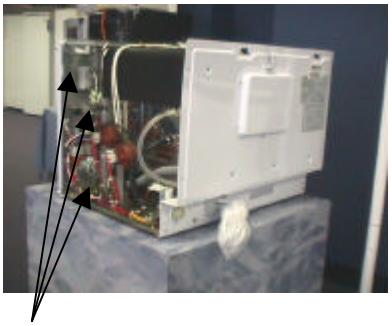


Step 3:Open door and remove six Screws on left and top edges of inner liner.



Step 4: Remove casing screws on rear of unit

Step 5: Lift casing straight off



Step 6: Remove six screws fastening front control cover.

8. Inner Wiring Connections Check

Power is carried to the components of the dishwasher by a network of insulated wires. These wires are connected to the timer, switches and other dishwasher components by means of push-on connectors.

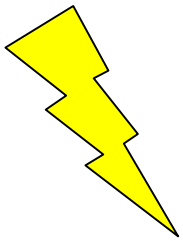
It is very important that the wiring be free of any damage. Any cut that reduces the diameter of the wire reduces the amount of power it will carry. Also, the wire may overheat and eventually break at that point. If the terminals become dull and oxidized they should be replaced.

Whenever servicing the wiring harness be sure to note the of any green and / or yellow/brown ground wires in the area in which you are working. Be certain all are properly connected upon completion of service. This is vital to avoid danger of shock or short circuit.

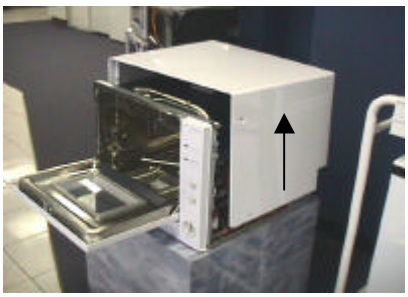
CAUTION: If replacement wire is required, use only appliance wire having the same temperature and guage rating as the wire you are replacing. This information is usually printed on the wire itself.

PROCEDURE

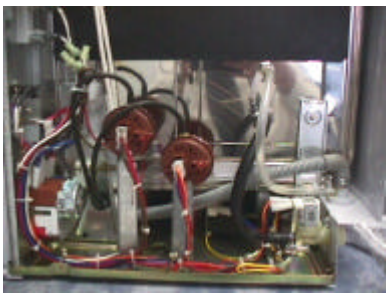
Repairing wiring and connections



Step 1: Be sure all controls are turned OFF. Disconnect power supply at distribution panel or unplug power cord from outlet. Watch for sharp edges.



Step 2: This procedure requires the removal of the outer casing. If you are unfamiliar with this process, please refer to procedure #7:Removing outer Casing.



Step 3: Inspect all push-on terminals and inner connecting wiring for signs of damage. i.e. burnt, pinched, loose or frayed.

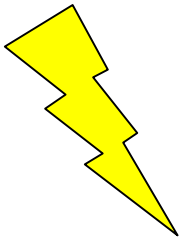
9. Door Latch

The door latch is essential to the operation of the dishwasher. Latching the door closes a switch allowing electrical current to flow to the timer. The timer controls all other components.

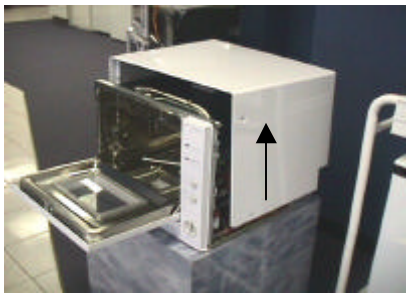
If the door latch switch is open, the dishwasher will not operate. The latch switch cannot be activated while the door is open. This safety mechanism prevents the dishwasher from being operated when the door is open. However, if the door latch switch contacts become stuck in the closed position, the dishwasher will not stop when door is opened during the cycle.

PROCEDURE

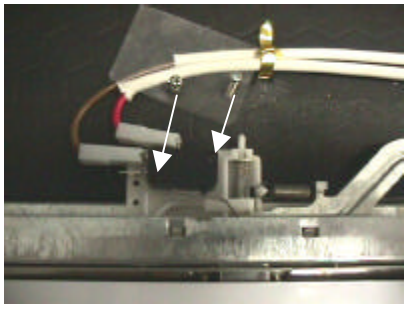
Door Latch Switch Replacement



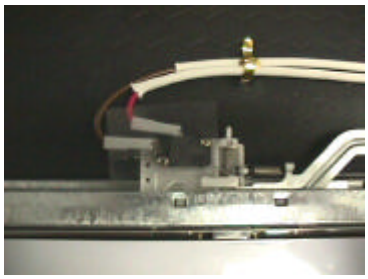
Step 1: Always unplug from receptacle before repairing.



Step 2: Remove outer casing.



Step 3: Check for defects in micro-switch or connections. If switch is bad remove the two mounting screws. Disconnect and replace switch.



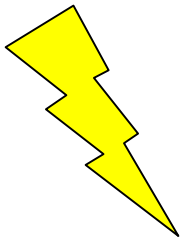
Step 4: Install new microswitch and connect same as original installation.

10.Timer

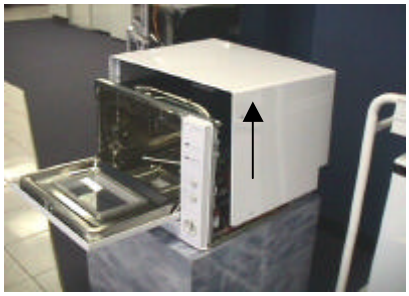
The dishwasher timer consists of a timer motor and a variety of switches that automatically controls every phase of the dishwashers operation. The timer motor runs at a constant speed, like a clock. As it advances through the selected cycle, the timer's internal switches open and close in a precise sequence. When a preset period has elapsed, the timer opens the switch again and shuts off the power to that component.
All outgoing wires from the timer are number-coded. By referring to the circuit diagram, you can trace the path of electrical current from the timer to any component.
The timer is a very reliable mechanism. It is best to eliminate all other possible causes before attempting to test or replace the timer.

PROCEDURE

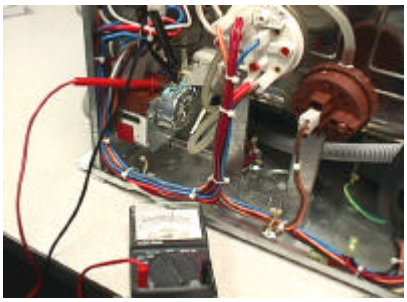
Inspecting and replacing timer



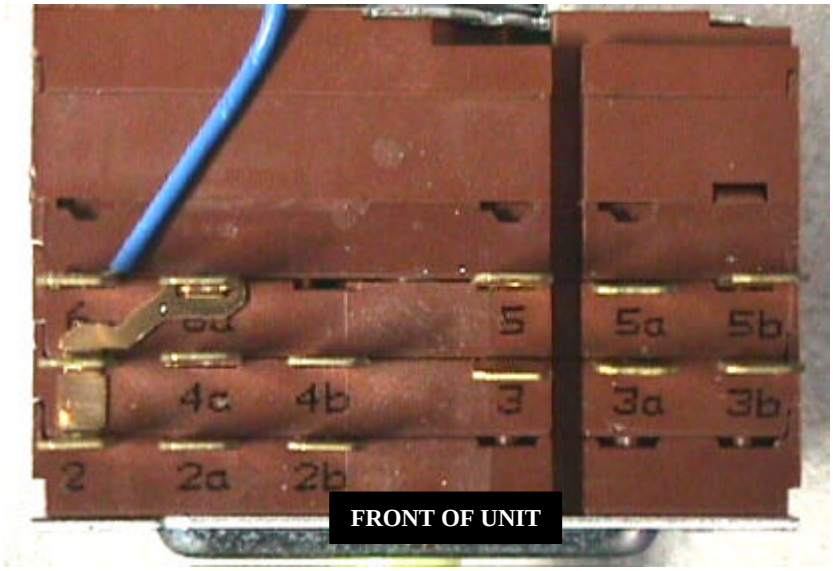
Step 1: Be sure all controls are turned OFF. Disconnect power supply at distribution panel or unplug power cord from outlet. Watch for sharp edges.



Step 2: This procedure requires the removal of the outer casing. If you are unfamiliar with this process, please refer to procedure #7:Removing outer Casing.



Step 3: To check timer motor, set the timer to the off position and check for continuity through the motor windings (approx. 2k ohms). If the windings are open replace timer.

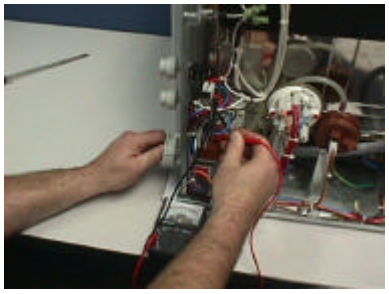


Step 4:Refer to dishwasher's circuit Diagram page 1 to see which contacts close to activate a particular component. (Example:4 to 4a close for drain pump)

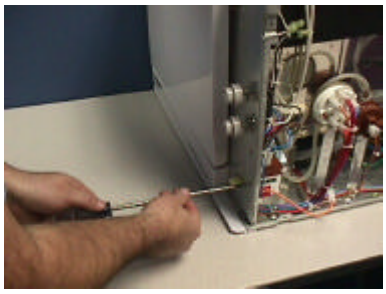
Refer to the timing chart on page 14 to determine when the individual contacts close .

PROCEDURE

Inspecting and replacing timer (Continued)

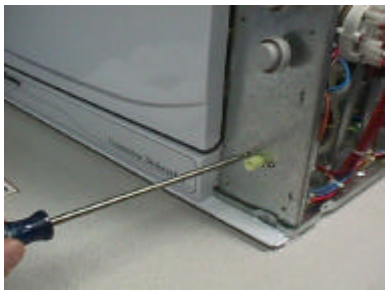


Step 5:Remove the leads from the Terminals to be checked. Using an ohm meter, check the resistance through the contact while turning the timer. If the contacts being checked do not close at the appropriate times during the cycle, replace the timer
.



Step 6:To remove the timer, remove the two timer mounting screws.

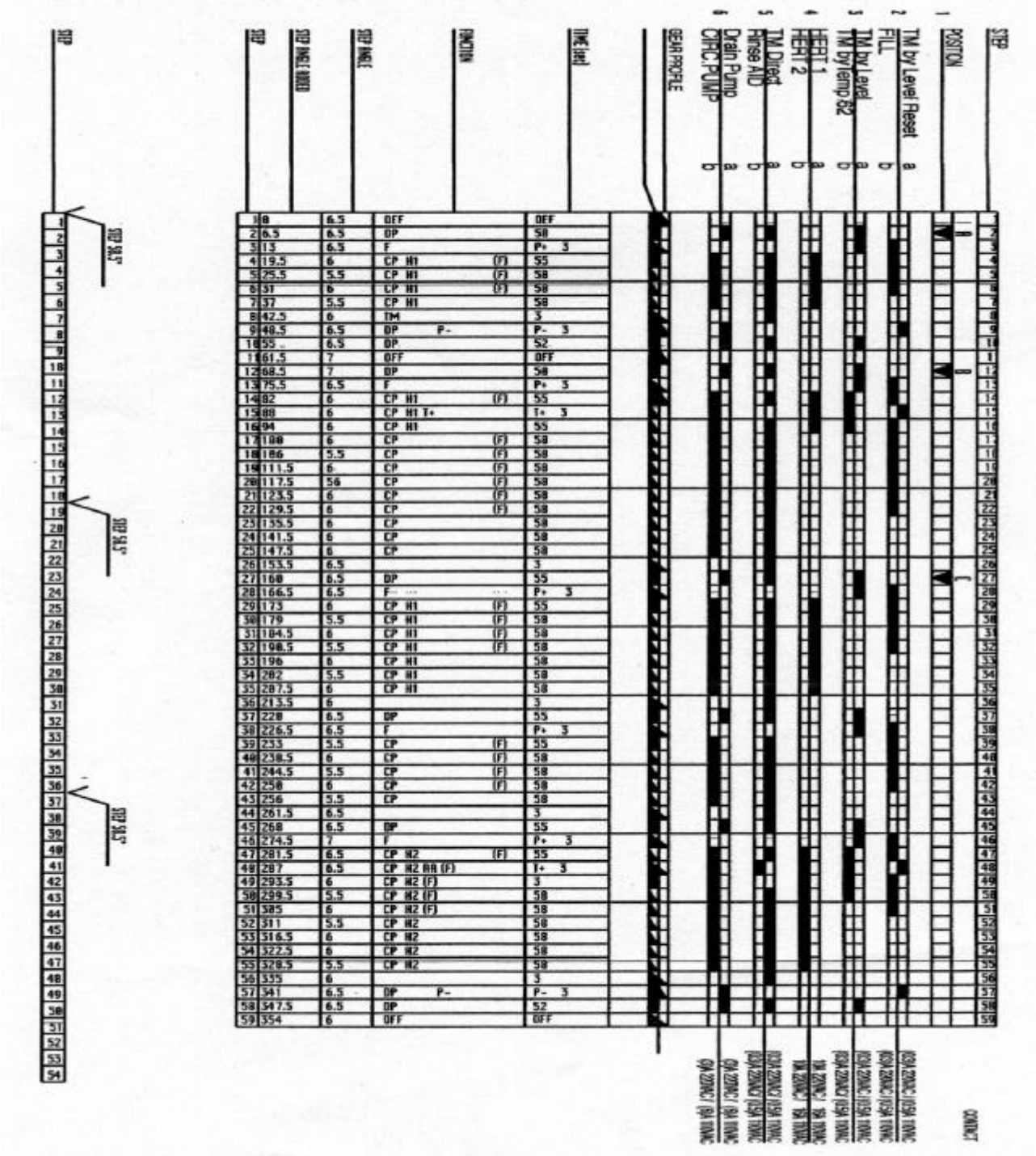
Step 7:Move leads terminal for terminal to the new timer.



Step 8: Remount new timer

Step 9: Reassemble dishwasher, apply power and test operation.

Timer : Cam Timing Chart



STEP		STEP ANGLE (DEG)	STEP ANGLE	FUNCTION	TIME (sec)
1	0	6.5		OFF	OFF
2	6.5	6.5		DP	58
3	13	6.5		F	P+ 3
4	19.5	6		CP H1 (F)	55
5	25.5	5.5		CP H1 (F)	58
6	31	6		CP H1 (F)	58
7	37	5.5		CP H1	58
8	42.5	6		TM	3
9	48.5	6.5		DP P-	P- 3
10	55	6.5		DP	52
11	61.5	7		OFF	OFF
12	68.5	7		DP	58
13	75.5	6.5		F	P+ 3
14	82	6		CP H1 (F)	55
15	88	6		CP H1 T+	T+ 3
16	94	6		CP H1	55
17	100	6		CP (F)	58
18	106	5.5		CP (F)	58
19	111.5	6		CP (F)	58
20	117.5	56		CP (F)	58
21	123.5	6		CP (F)	58
22	129.5	6		CP (F)	58
23	135.5	6		CP	58
24	141.5	6		CP	58
25	147.5	6		CP	58
26	153.5	6.5			3
27	160	6.5		DP	55
28	166.5	6.5		F	P+ 3
29	173	6		CP H1 (F)	55
30	179	5.5		CP H1 (F)	58
31	184.5	6		CP H1 (F)	58
32	190.5	5.5		CP H1 (F)	58
33	196	6		CP H1	58
34	202	5.5		CP H1	58
35	207.5	6		CP H1	58
36	213.5	6			3
37	220	6.5		DP	55
38	226.5	6.5		F	P+ 3
39	233	5.5		CP (F)	55
40	238.5	6		CP (F)	58
41	244.5	5.5		CP (F)	58
42	250	6		CP (F)	58
43	256	5.5		CP	58
44	261.5	6.5			3
45	268	6.5		DP	55
46	274.5	7		F	P+ 3
47	281.5	6.5		CP H2 (F)	55
48	287	6.5		CP H2 RR (F)	T+ 3
49	293.5	6		CP H2 (F)	3
50	299.5	5.5		CP H2 (F)	58
51	305	6		CP H2 (F)	58
52	311	5.5		CP H2	58
53	316.5	6		CP H2	58
54	322.5	6		CP H2	58
55	328.5	5.5		CP H2	58
56	335	6			3
57	341	6.5		DP P-	P- 3
58	347.5	6.5		DP	52
59	354	6		OFF	OFF

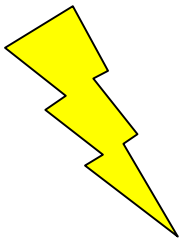
11. Power switch and option switch

When you press the power switch on, and the dishwasher remains dead with no power light this may be a malfunction of the power switch.

When you press the option switch and the heating element can not be energized and the Sani/Econo light does not come on, this may be a malfunction of the option switch.

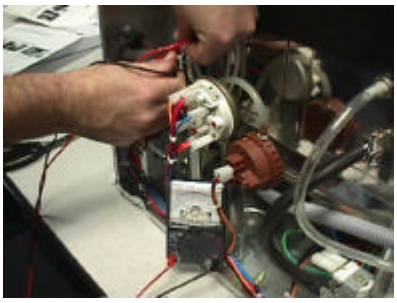
PROCEDURE

Inspecting / replacing : power switch and option switch

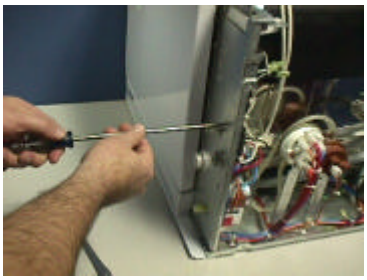


Step 1: Be sure all controls are turned OFF. Disconnect power supply at distribution panel or unplug power cord from outlet. watch for sharp edges.

Step 2: This procedure requires the removal of the outer casing. If you are unfamiliar with this process, please refer to procedure #7:Removing outer casing..



Step 3: Using a ohm meter, check for bad contacts in the power or option switches.



Step 4: If the switch is defective, replace the switch and reconnect same as original installation.

12.Water inlet valve

The water inlet valve controls the flow of water into the dishwasher. A solenoid coil attached to the valve housing creates a magnetic field when energized. This magnetic field pulls open a plunger inside the valve allowing the water to flow through and into the dishwasher.

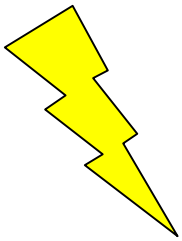
The water fill is controlled by the timer, which opens the valve for a predetermined amount of time

Under normal conditions the tub should fill to approximately 85mm. or 3.5in. from the bottom of the sump. Open the dishwasher after any fill cycle to check for normal water level.

A malfunctioning water inlet valve solenoid may only allow the dishwasher to fill intermittently. In this case no water will enter the dishwasher during the rinse cycle. This problem can best be diagnosed by operating the dishwasher and listing for the water entering during each fill cycle.

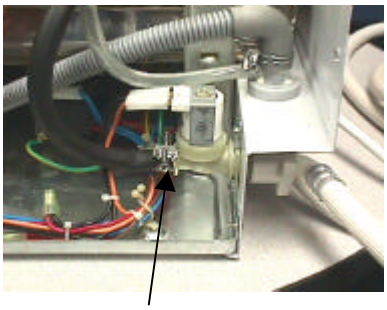
PROCEDURE

Inspecting and replacing : Water inlet valve

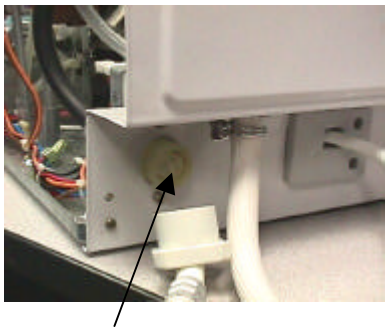


Step 1: Be sure all controls are turned OFF. Disconnect power supply at distribution panel or unplug power cord from outlet. watch for sharp edges.

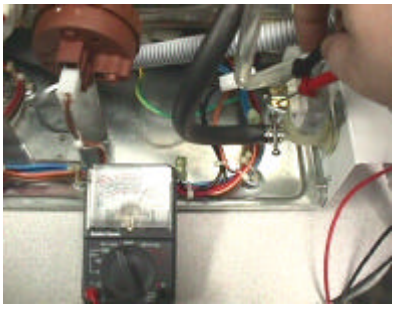
Step 2: This procedure requires the removal of the outer casing. If you are unfamiliar with this process, please. refer to procedure #7:Removing outer casing..



Step 3: Locate valve where inlet hose is attached. Check wires and valve body.



Step 4: If water fill is less than normal,detach fill hose to expose filter screen. Clean or replace as necessary.

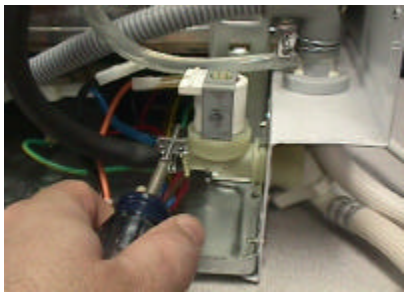


Step 5: Using a ohm meter check for continuity through the solenoid. If solenoid winding is open, replace valve.

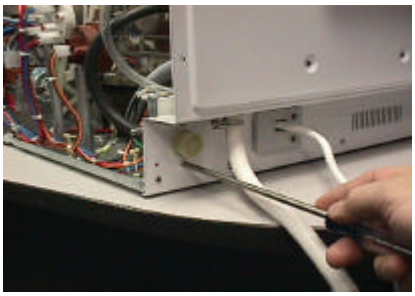
Step 6: To replace water valve, shut off water supply and disconnect faucet coupling.

PROCEDURE

Inspecting and replacing: Water inlet valve (continued)



Step 7: Disconnect incomming water Water supply hose. Remove clamp and detach smaller hose running into dishwasher tub.



Step 8: Remove mounting screw that secures fill valve to rear panel. Install new valve and reconnect leads and water lines. Reassemble dishwasher and reconnect water and power supply.

NOTE: If water continues to fill, even when power is disconnected, this is caused by damage to, or sediments in valve housing or bellows. In either case entire valve should be replaced.

NOTE: If open winding in solenoid were proceeded by continuous filling and draining. Make sure timer is Advancing through the fill cycle. Continuous duty will burn out water valve solenoid.

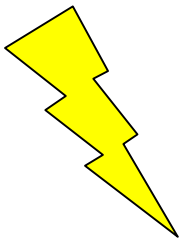
13. Pressure Switches

There are two pressure switches on the dishwasher. One is for controlling normal water level set at approx. 85mm or 3.5 inches of water in sump. This will be referred to as the Normal Pressure Switch. The other one is for preventing overflow and is set for approx. 102mm or 4 inches of water in sump. This one will be referred to as the Safety Pressure Switch. If the water in the tank rises above the pre-set level, the safety pressure switch opens the Circuit and stops power to the fill valve and closes the circuit to the drain pump, expelling excess water.

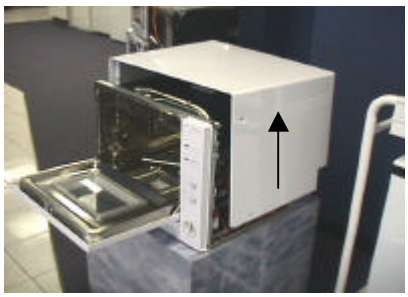
The safety pressure switch shuts water off only in cases of electrical malfunction. If a mechanical defect or foreign object causes the inlet valve to stick open, the safety pressure switch will not be able to stop the overflow.
The safety pressure switch should never cut off the water inlet valve solenoid during normal fill, if it does it is not properly adjusted.

PROCEDURE

Inspecting and replacing: Pressure switch

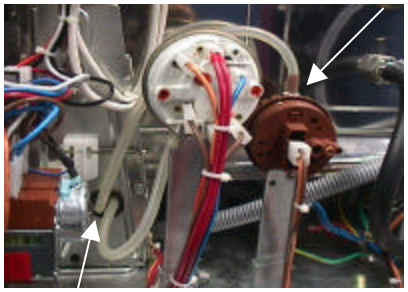


Step 1: Be sure all controls are turned OFF. Disconnect power supply at distribution panel or unplug power cord from outlet. watch for sharp edges.

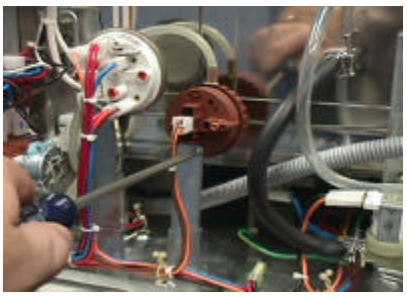


Step 2: This procedure requires the removal of the outer casing. If you are unfamiliar with this process, please. refer to procedure #7:Removing outer casing..

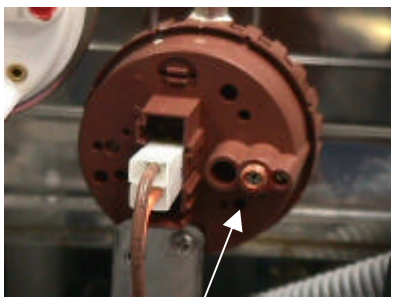
Step 3: Hold a ruler vertically in the sump, the tub should fill between 81-87mm or 3.25 to3.5 inches.



Step 4: If the water level is incorrect Check the pressure switch connecting hoses and all connections to see if there is air leakage and pressure loss. Reseal any loose connections.



Step 5: If a pressure switch is bad remove mounting screw and replace switch.



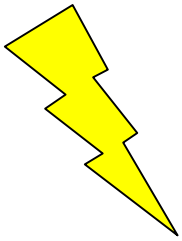
Step 6: Pressure switches must be adjusted with a special screwdriver to the proper level (step 3). After adjustment is complete a drop of glue should be placed on the Threads to prevent further movement

14. Pump and Motor Assembly

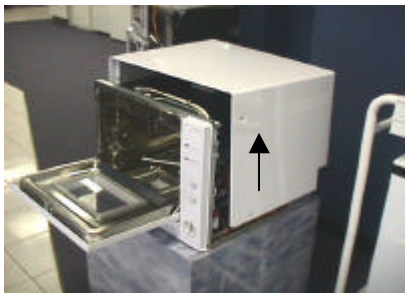
The circulation pump and drain pump are combined and driven by the same reversing motor. The timer activates the circulation winding during wash and the drain winding during pumpout with pauses between changes in direction.

PROCEDURE

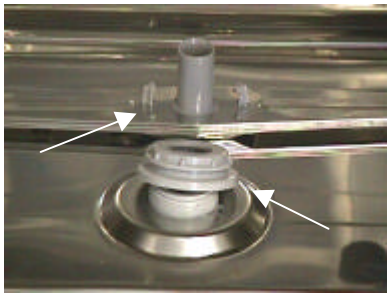
Inspecting and replacing: Pump and motor assembly



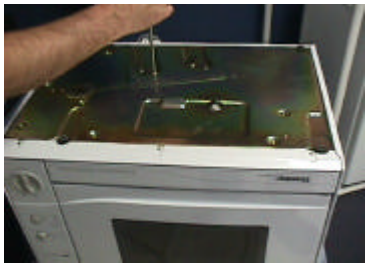
Step 1: Be sure all controls are turned OFF. Disconnect power supply at distribution panel or unplug power cord from outlet. watch for sharp edges.



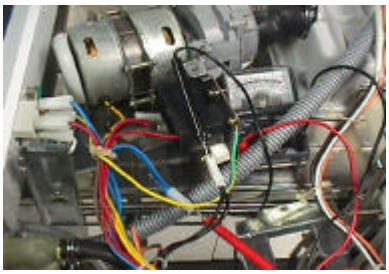
Step 2: This procedure requires the removal of the outer casing. If you are unfamiliar with this process, please refer to procedure #7:Removing outer casing..



Step 3: Unclip and remove washarm. Unthread and remove washarm base nut.



Step 4: Turn dishwasher up side down. Remove 4 motor mounting and bracket mounting screws. Release wire clips and remove bottom panal.



Step 5: Using a ohm meter, check the pump motor windings.
Wash winding = blue lead on resistor
Drain winding = #14 on safety pressure switch.
Common = black lead on fill valve.

Step 6: If defective, release hose camps and replace pump and motor assembly.

15. Heating Element and Safety Thermostat

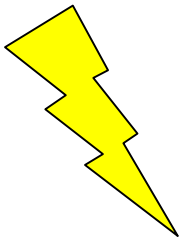
The heating element is located at the bottom of the sump. When the unit is energized during the heated wash cycle , it heats the water. The warmed air rises through the sump cover into the tub providing efficient washing and drying of the dishes.

An inner resistance coil of nichrome wire, which does the actual heating, is completely surrounded by an electrical insulation material. This assembly is protected by a metal sheath to help reduce damage and oxidation. Since you can't see the internal coil, in most cases you will have to rely on the ohm meter to determine the condition of the coil.

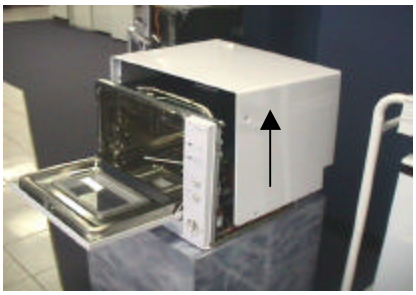
The safety thermostat acts as a temperature limit switch. If a malfunction causes the temperature rises above the Limit of the thermostat, the heating element is disabled preventing damage to the dishwasher.

PROCEDURE

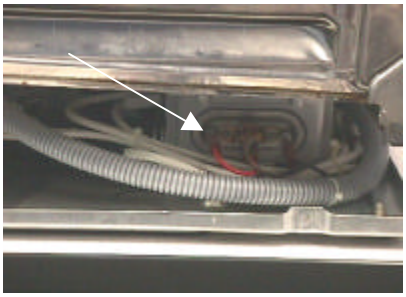
Inspecting and replacing: Heating element and thermostat



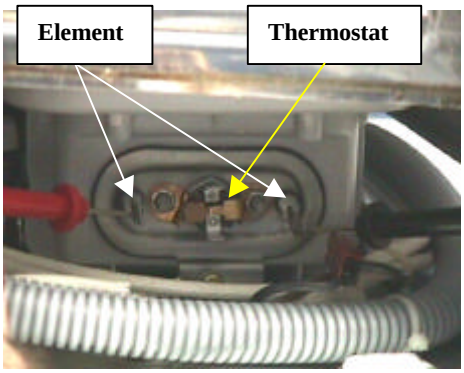
Step 1: Be sure all controls are turned OFF. Disconnect power supply at distribution panel or unplug power cord from outlet. watch for sharp edges.



Step 2: This procedure requires the removal of the outer casing. If you are unfamiliar with this process, please. refer to procedure #7:Removing outer casing..



Step 3: The heater and thermostat are located on the left side of the dish-washer in the end of the sump. remove wires and inspect visually for burned or damaged connections.



Step 4: Using an ohm meter, remove the wires And check for continuity through the element And safety thermostat independently. If either component checks open,"no reading", it is bad and needs to be replaced.

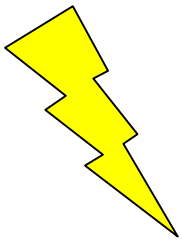
Step 5: To replace either componant, remove the two mounting nuts using a 8mm or 11/32 deepwell scocket. Install new component and re assemble dishwasher.

16. Normal Thermostat

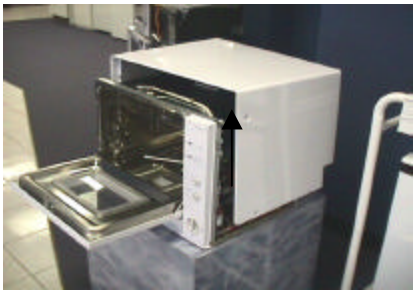
The normal thermostat is used to control the water temperature during the wash and final rinse when the sani option is selected. When the sani option is selected, the timer stops at specific points in the cycle and the heating element is energized. When the water temperature reaches 154 F or 67.7C the thermostat contacts close and the timer continues through the cycle. The extra water heating period assures temperatures high enough to produce good wash results.

PROCEDURE

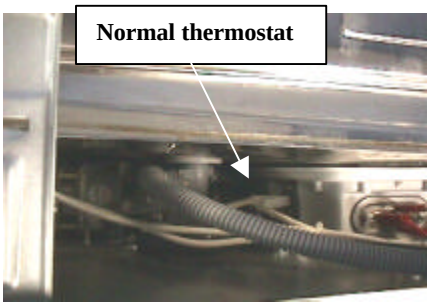
Inspecting and replacing: Normal Thermostat



Step 1: Be sure all controls are turned OFF. Disconnect power supply at distribution panel or unplug power cord from outlet. watch for sharp edges.



Step 2: This procedure requires the removal of the outer casing. If you are unfamiliar with this process, please. refer to procedure #7:Removing outer casing.



Step 3: The normal thermostat can be accessed from the left side of the dish-washer and is on the back of the sump.

Step 4: Using an ohm meter remove the wires and check for continuity across the thermostat terminals. These contacts should always be <u>open</u> at room temperature so if there is any reading at all the thermostat must be replaced .

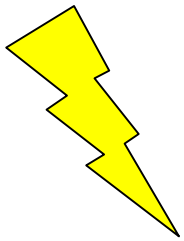
Step 5: To replace the normal thermostat remove the two mounting screws and install the new component.
Reassemble dishwasher and check operation.

17. Hose Connector

The hose assembly is made up of a water inlet hose, a drain hose and a hose connector. The hose connector fastens to the kitchen faucet by means of a faucet adapter. The hose connector also has a pressure relief button to relieve pressure before disconnecting and allows water to be used in the sink while the dishwasher is operating.

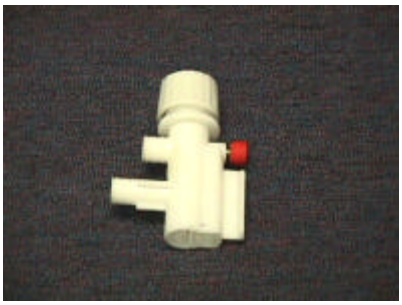
PROCEDURE

Inspecting and replacing: Hose Connector



Step 1: Be sure all controls are turned OFF. Disconnect power supply at distribution panel or unplug power cord from outlet. watch for sharp edges.

Step 2:Inspect hoses for cracking or deterioration. Disconnect and replace as necessary.



Step 3: Any leaks in the connector are resolved by replacing the hose connector as an assembly.

Step 4: Replace washers in all Leaking hose connections. Reassemble dishwasher and Check operation.

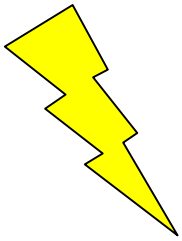
18. Rinse Agent Dispenser

The rinse agent dispenser on dishwashers automatically inject a small amount of liquid rinse agent into the dishwasher during the final rinse cycle. This wetting solution acts to break down the surface tension of the water, minimizing the formation of spots and streaks on dishes and glasses.

The dispenser tank holds about one month supply of agent. During the final rinse the timer activates a solenoid on the dispenser assembly. The solenoid pulls up a rubber tipped valve pin allowing a small amount of agent to be released into the tank where it is distributed by the action of the water.

PROCEDURE

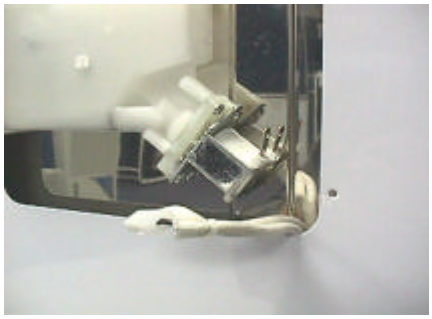
Inspecting and replacing: Rinse agent dispenser



Step 1: Be sure all controls are turned OFF. Disconnect power supply at distribution panel or unplug power cord from outlet. watch for sharp edges.

Step 2: If rinse agent is leaking inside, remove and inspect cap and washer. reassemble wipe off tank and wait 5 Minutes. If seepage still shows replace the dispenser assembly.

Step 3: Remove six screws and small access cover on rear of dishwasher. Inspect tank for signs of leakage. If the tank is cracked or split, replace the dispenser assembly.



Step 4: Check wiring connections and terminals. Replace or repair any faulty connections. Using an ohm meter check for solenoid for continuity. If the coil is open “no reading “ replace the coil.

Step 5: To remove the dispenser assembly, remove the fill cap and mounting nuts from inside the tub. after the mounting nuts are removed, the dispenser assembly con be replaced from the access panel on rear.

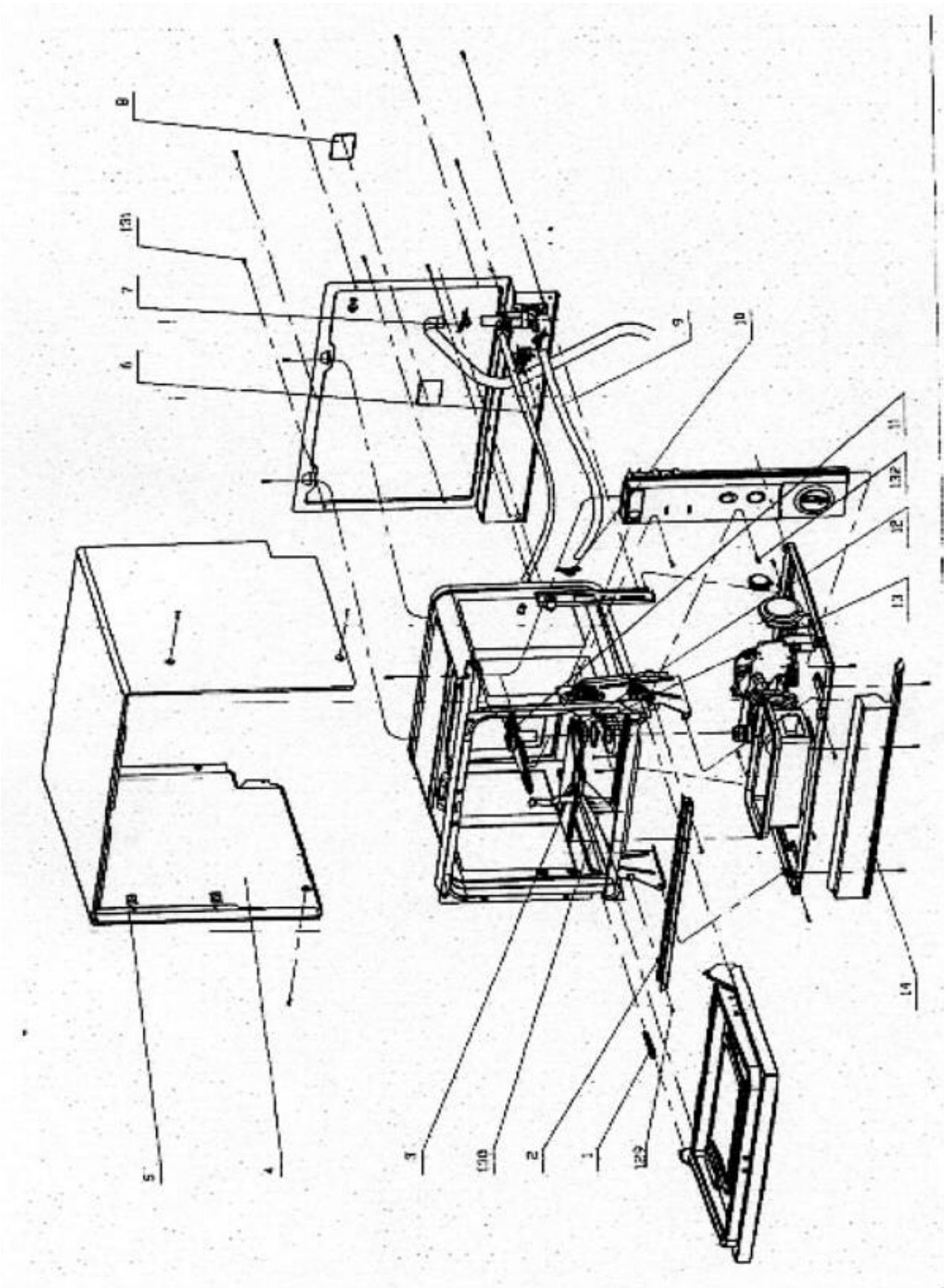
Ilus No.	Description	Qty Per Unit	Part No.
1	Door Spring	1	1.398
2	Front Cover Facing Bar	1	2.398
3	Filter Assembly	1	3.398
4	Outer Casing	2	4.398
5	Outer Casing Screw	1	5.398
6	Absorbtion Proofed Connecting Hose	1	6.398
7	Clamp 24	3	7.398
8	Name Plate	1	8.398
9	Inlet Hose	1	9.398
10	Clamp 16	2	10.398
11	Spray Arm Assembly	1	11.398
12	Spray Arm Base Screw	1	12.398
13	Spray Arm Base Gasket	1	13.398
14	Front Cover	1	14.398
15	Bottom Pan	1	15.398
16	Foot	5	16.398
17	Motor Base Rubber Pad	4	17.398
18	Washer	4	18.398
19	Pressure Switch Bracing Bar	1	19.398
20	Pressure Switch (normal)	1	20.398
21	Pressure Switch (safety)	1	21.398
22	Clamp 24	1	22.398
23	Clamp 26	1	23.398
24	Drain pump Drain Hose	1	24.398
25	Clamp 45.1	1	25.398
26	Clip	7	26.398
27	Nut	5	27.398
28	Sump	1	28.398
29	Heating Element	1	29.398
30	Heating Element Gasket	1	30.398
31	Heating Element Mounting Plate	1	31.398
32	Thermostat #1	1	32.398
33	Thermostat #1 Clamp	1	33.398
34	Sump Gasket	1	34.398
35	Thermostat #2	1	35.398
36	Sump Tap	1	36.398
37	Clamp 26	1	37.398
38	Drain pump Inlet Hose	1	38.398
39	Circulation Hose	1	39.398
40	Clamp 41.5	1	40.398
41	Pressure Switch Connecting Hose	1	41.398

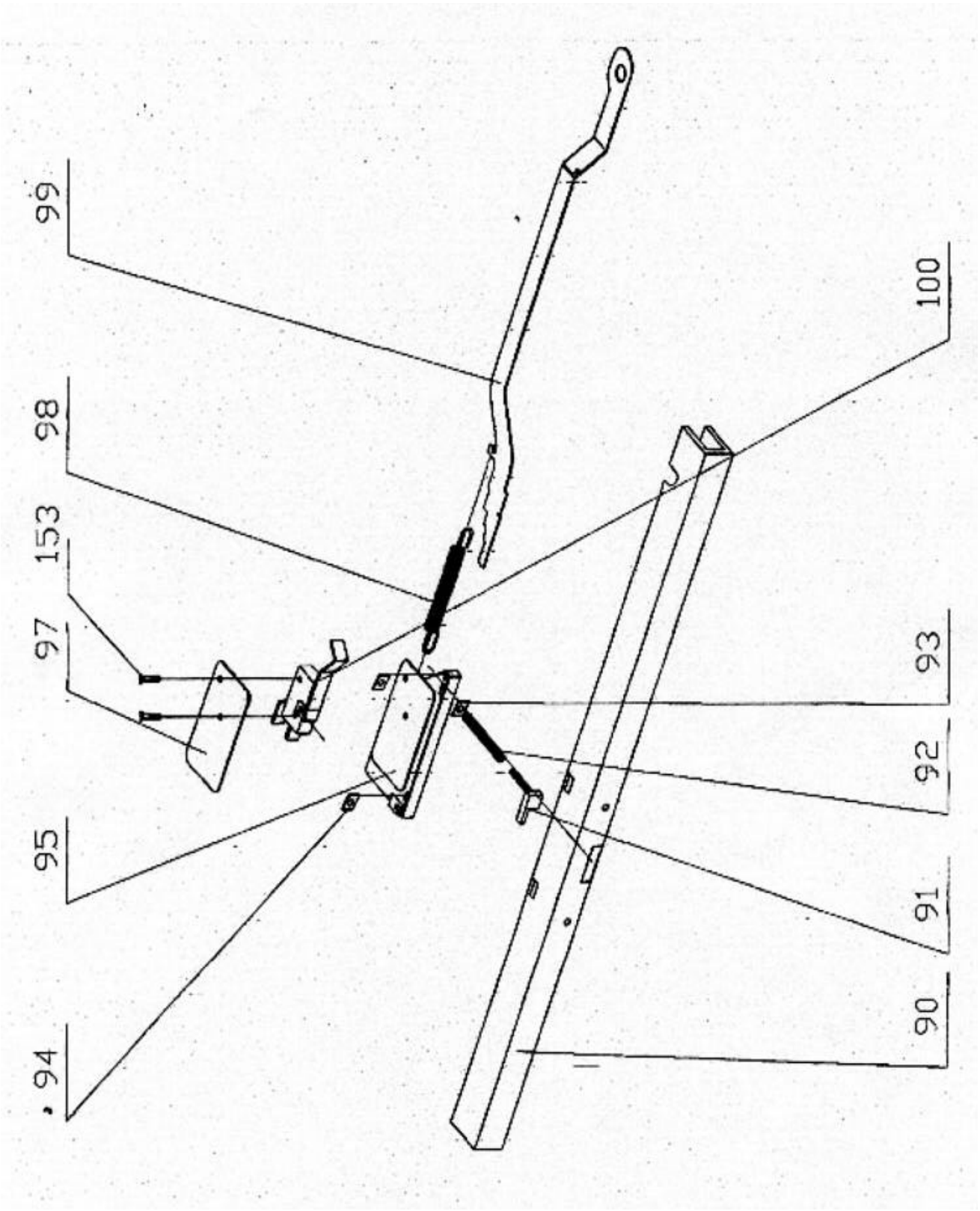
Ilus No.	Description	Qty Per Unit	Part No.
42	Pressure Switch Connector	1	42.398
43	Pressure Switch Connector Hose	1	43.398
44	Clamp 22	2	44.398
45	Thermostat #2 Gasket	1	45.398
46	Pressure Switch Connector Hose #2	1	46.398
47	Spray arm hose	1	47.398
48	Circulation outlet gasket	2	48.398
49	Circulation pump	1	49.398
50	Circulation wheel	1	50.398
51	Diaphragm	1	51.398
52	Drain wheel	1	52.398
53	Motor axial gasket	1	53.398
54	Pump gasket	1	54.398
55	Drain pump assembly	1	55.398
56	Motor bracing bar	1	56.398
57	Resistor	1	57.398
58	Capacitor	1	58.398
59	Motor	1	59.398
60	Fan	1	60.398
61	Outer door assembly	1	61.398
62	Door left hinge	1	62.398
63	Pulley	2	63.398
64	Pulley axial	2	64.398
65	Door bracing bar	1	65.398
66	Inner door	1	66.398
67	Door hook	1	67.398
68	Ventilation window gasket	1	68.398
69	Ventilation window	1	69.398
70	Ventilation window cover	1	70.398
71	Door right hinge	1	71.398
72	Door gasket 1	1	72.398
73	Inner container assembly	1	73.398
74	Door gasket 2	1	74.398
75	Front left bracing bar	1	75.398
76	Screw	6	76.398
77	Screw gasket	6	77.398
78	Left rear bracing bar	1	78.398
79	Top rubber plate	1	79.398
80	Inlet connector 1	1	80.398
81	Inlet connector 2	1	81.398
82	Inlet connector gasket	2	82.398

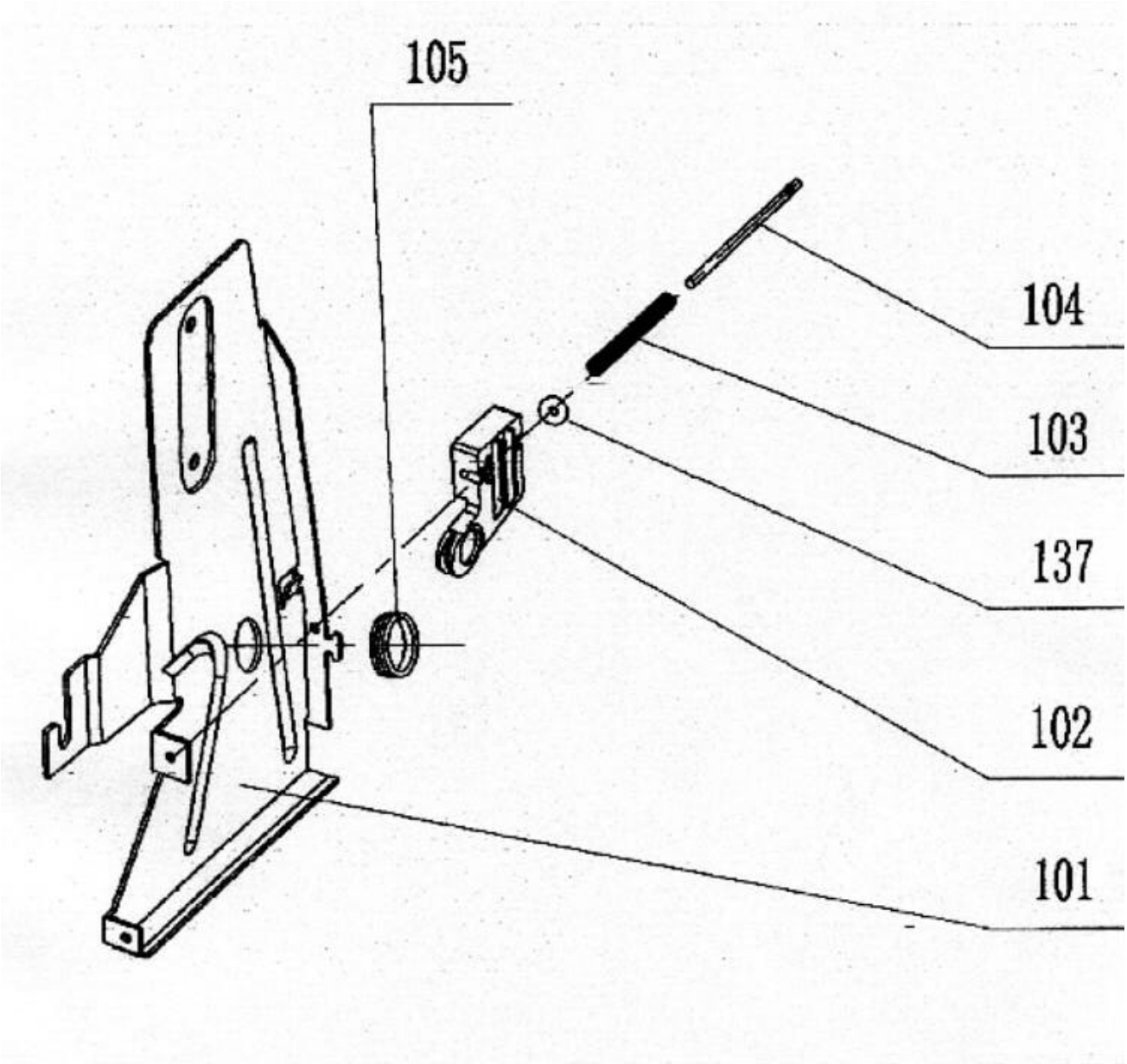
Ilus No.	Description	Qty Per Unit	Part No.
83	Right rear bracing bar	1	83.398
84	Dispenser gasket	2	84.398
85	Dispenser solenoid	1	85.398
86	Dispenser cover #1	1	86.398
87	Dispenser mounting screw	1	87.398
88	Dispenser cover #2	1	88.398
89	Dispenser body assembly	1	89.398
90	Door lock holder	1	90.398
91	Slider	1	91.398
92	Door lock spring #1	1	92.398
93	Spring #1 washer	1	93.398
94	Door lock screw	2	94.398
95	Door lock base	1	95.398
96			
97	Insulation piece	1	97.398
98	Door lock spring #2	1	98.398
99	Linkage	1	99.398
100	Microswitch	1	100.398
101	Right front bracing bar	1	101.398
102	Wobbler	1	102.398
103	Wobbler spring	1	103.398
104	Axis	1	104.398
105	Forel ring	1	105.398
106	Rear panel	1	106.398
107	Power cord clamp	1	107.398
108	Insulation porcelain	1	108.398
109	Lug	2	109.398
110	Inlet valve	1	110.398
111	Inlet valve mounting plate	1	111.398
112	Drain hose connector	1	112.398
113	Power cord	1	113.398
114	Power cord pad	1	114.398
115	Turn knob	1	115.398
116	Switch button	2	116.398
117	Control panel	1	117.398
118	Door button	1	118.398
119	Pilot cover	2	119.398
120	Control panel bracing bar	1	120.398
121	Tumbling rod hinge	1	121.398
122	Tumbling rod hinge	1	122.398
123	Pilot holder	1	123.398

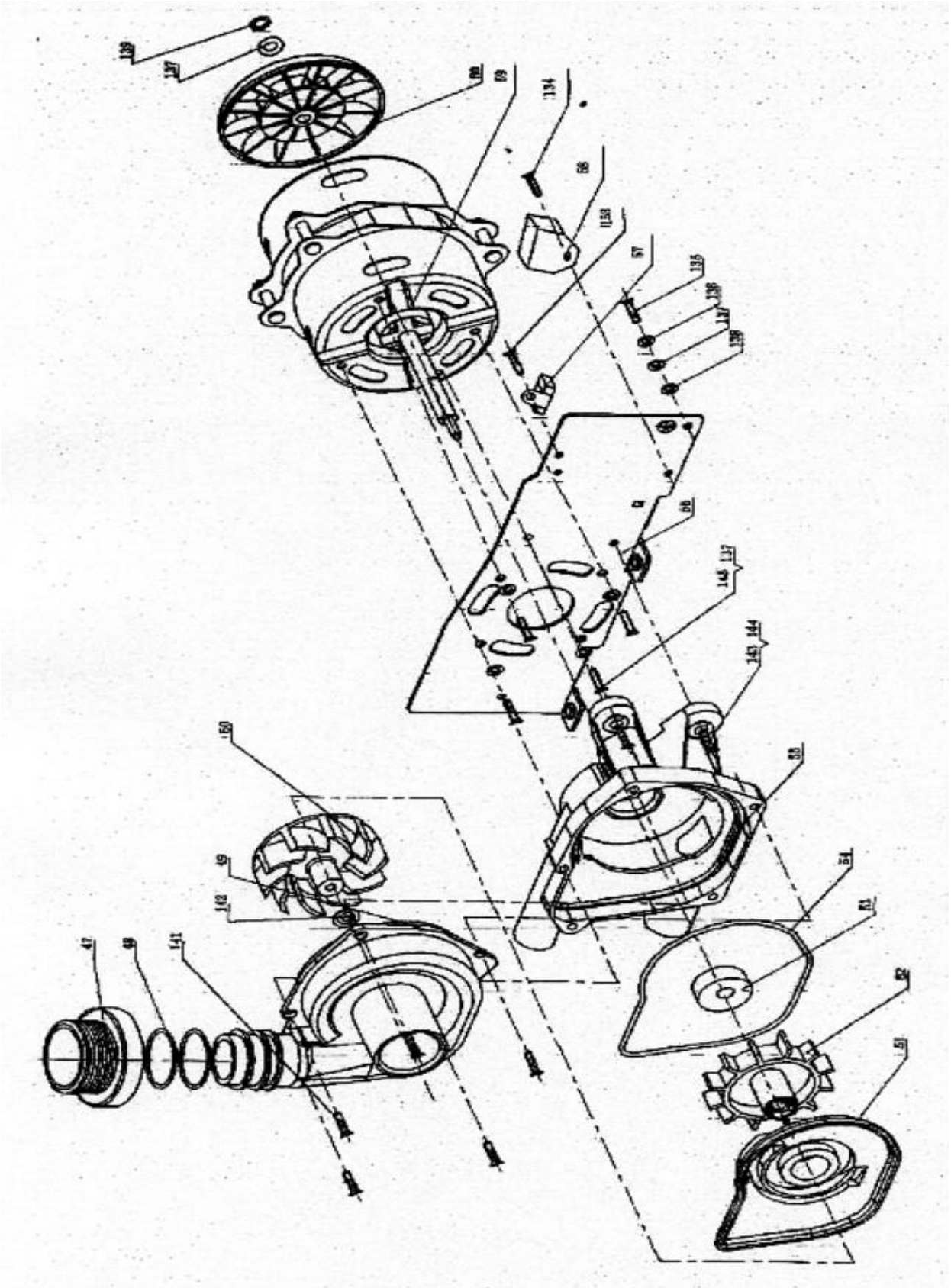
Ilus No.	Description	Qty Per Unit	Part No.
124	Pilot	2	124.398
125	Power switch	1	125.398
126	Option switch	1	126.398
127	Timer	1	127.398
128	Door lock button spring	1	128.398
129	Cross recessed pan head	45	129.398
	Tapping screw		
130	Cross recessed big pan head	10	130.398
	Tapping screw		
131	Cross recessed big pan head	8	131.398
	Tapping screw		
132	Cross recessed big pan head	8	132.398
	Tapping screw		
133	Cross recessed pan head	4	133.398
	Thread forming screw		
134	Cross recessed pan head	3	134.398
	Tapping screw		
135	Grounging screw	5	135.398
136	Spring washer	7	136.398
137	Inside swath locking washer	5	137.398
138	Plain washer #4	5	138.398
139	Hexagon nut	3	139.398
140	Cross recessed pan head	2	140.398
	Tapping screw		
141	Cross recessed pan head	5	141.398
	Tapping screw		
142	Open baffle	1	142.398
143	Cross recessed pan head thread	3	143.398
	Forming screw		
144	Plain washer #5	3	144.398
145	Cross recessed pan head screw	4	145.398
146	Cross recessed pan head screw	2	146.398
147	Cross recessed countersunk head	4	147.398
	screw		
148	Cross recessed pan head	4	148.398
	Tapping screw		
149	Cross recessed pan countersunk head	4	149.398
	Tapping screw		
150	Hexagon nut M5	8	150.398
151	Hexagon nut M12 X 1.5	1	151.398
152	Hexagon nut M16 X 1.5	1	152.398

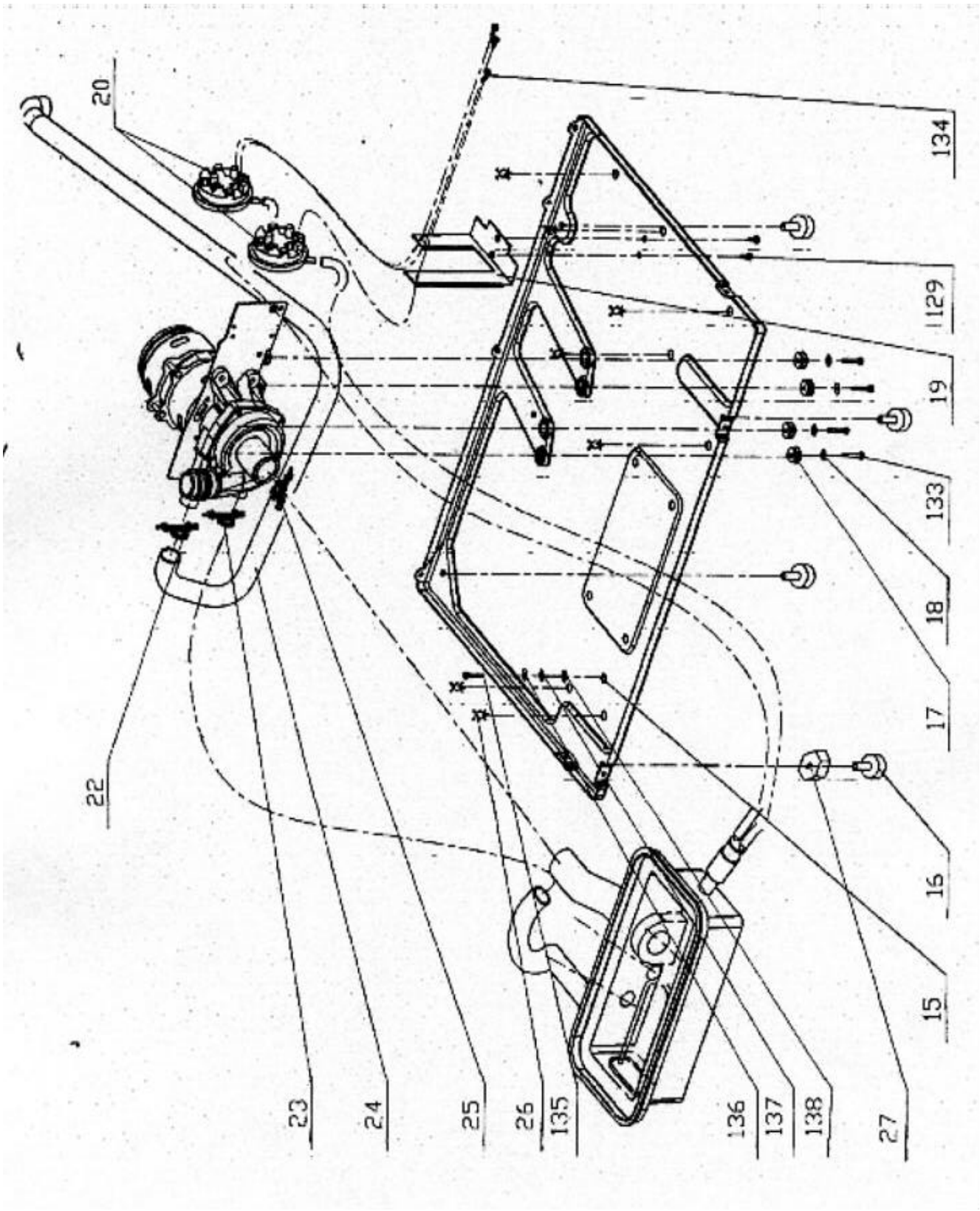
Ilus No.	Description	Qty Per Unit	Part No.
153	Cross recessed pan head tapping screw	2	153.398
154	Cross recessed pan head tapping screw	2	154.398
155	Cross recessed pan head tapping screw	2	155.398
156	Cross recessed pan head tapping screw	3	156.398
157	Cross recessed pan head screw	2	157.398
158	Cross recessed pan head forming screw	1	158.398
159	Cross recessed pan head tapping screw	2	159.398
160	Cross recessed pan head screw	4	160.398
161	Connecting wire	1	161.398
162	Instruction manual	1	162.398
163	Service manual	1	163.398
164	QC passed sticker	1	164.398
165	Plastic bag	3	165.398
166	Inlet hose assembly	1	166.398
167	Drain hose assembly	1	167.398
168	Packing pad #1	1	168.398
169	Packing pad #2	1	169.398
170	Packing pad #3	1	170.398
171	Packing pad #4	1	171.398
172	Hose holder	1	172.398
173	Wire basket	1	173.398
174	Cup rack	1	174.398
175	Basket wheel	1	175.398
176	Wheel axis	1	176.398
177	Silverware basket	1	177.398
178	Quick connector assembly	1	178.398
179	Condenser nut	1	179.398
180	Condenser gasket	1	180.398
181	Condenser	1	181.398
182	Small rear cover	1	182.398

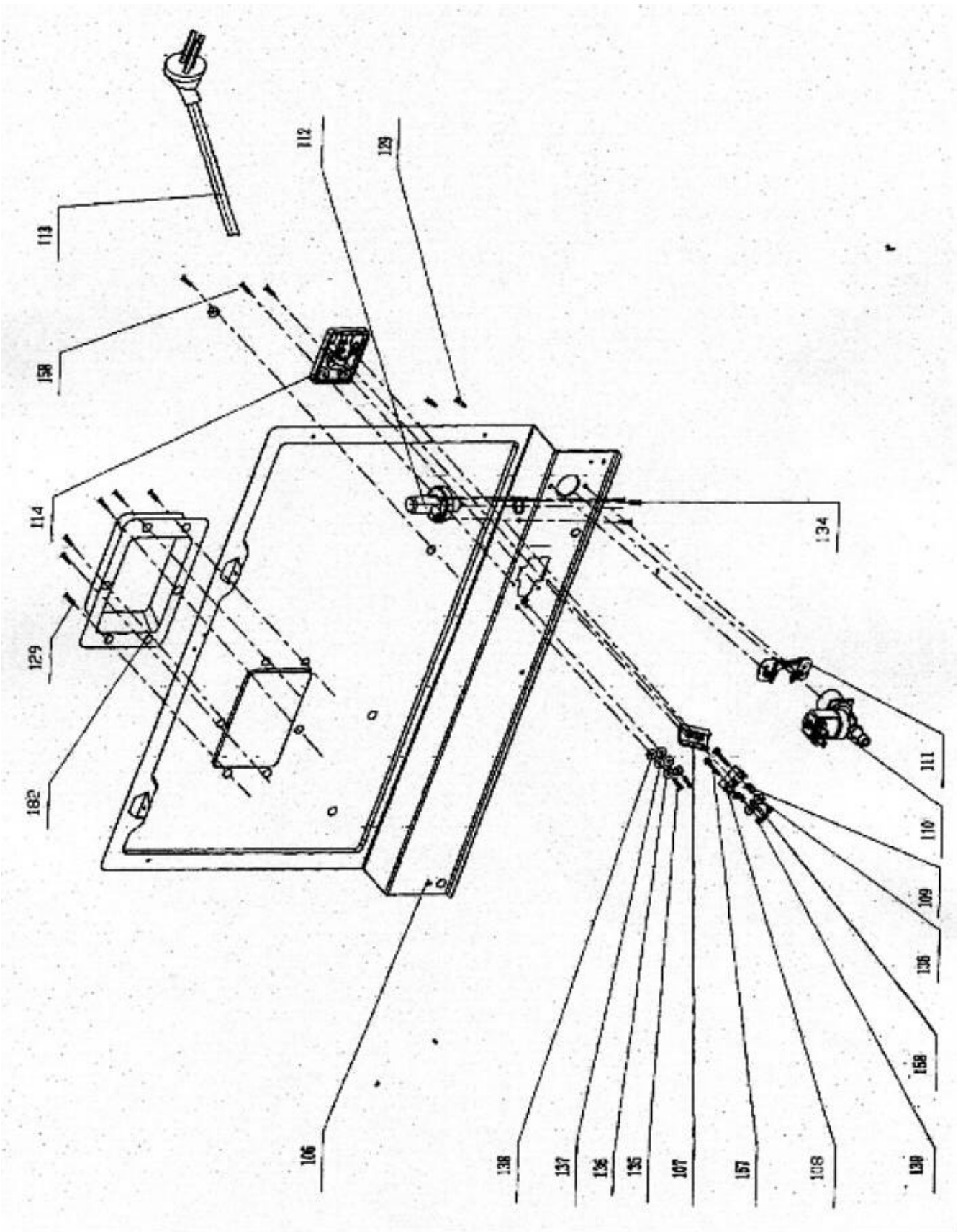

8
131
7
6
9
10
11
132
12
13
14
5
4
3
110
2
1
122

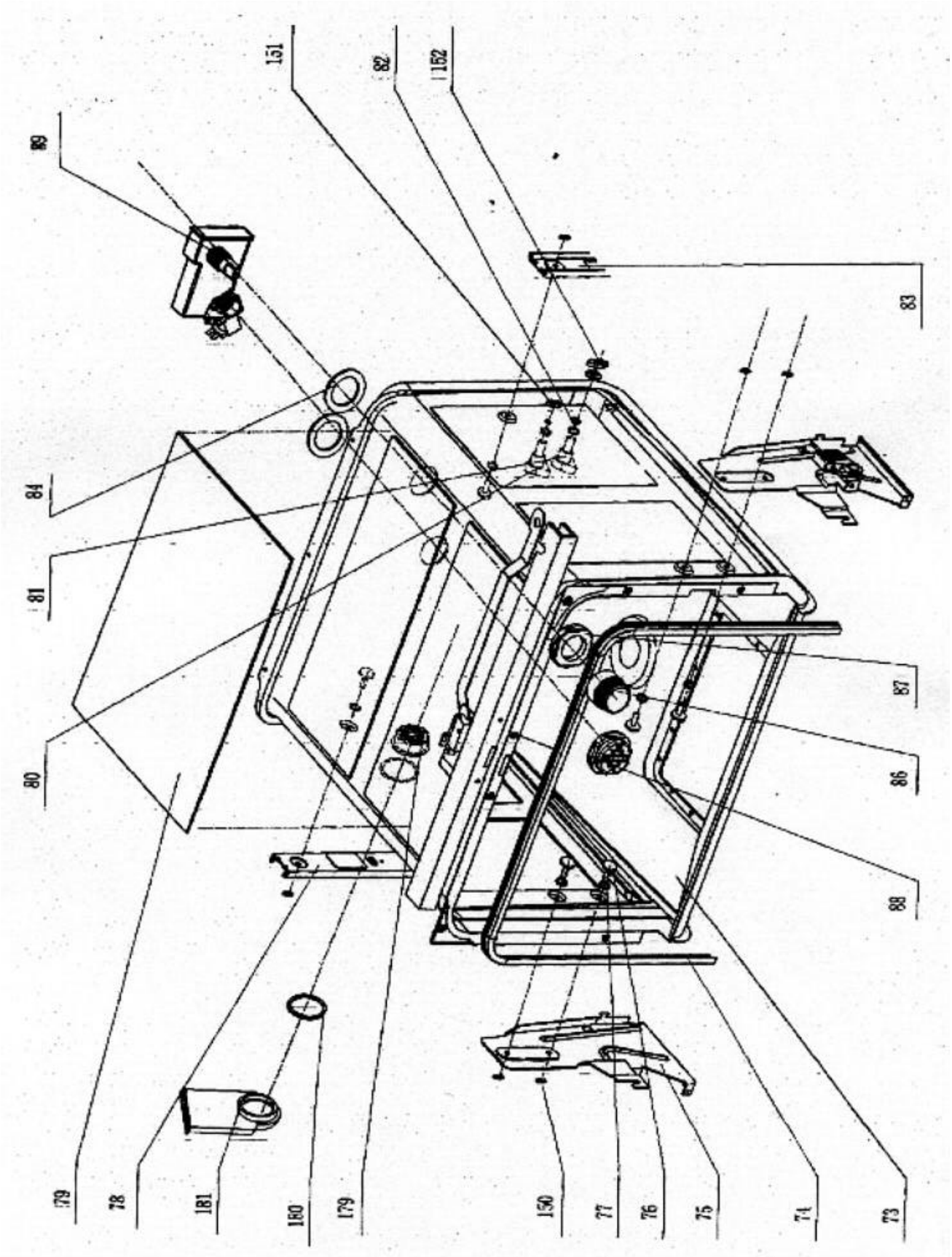

99
98
153
97
95
94
100
93
92
91
90

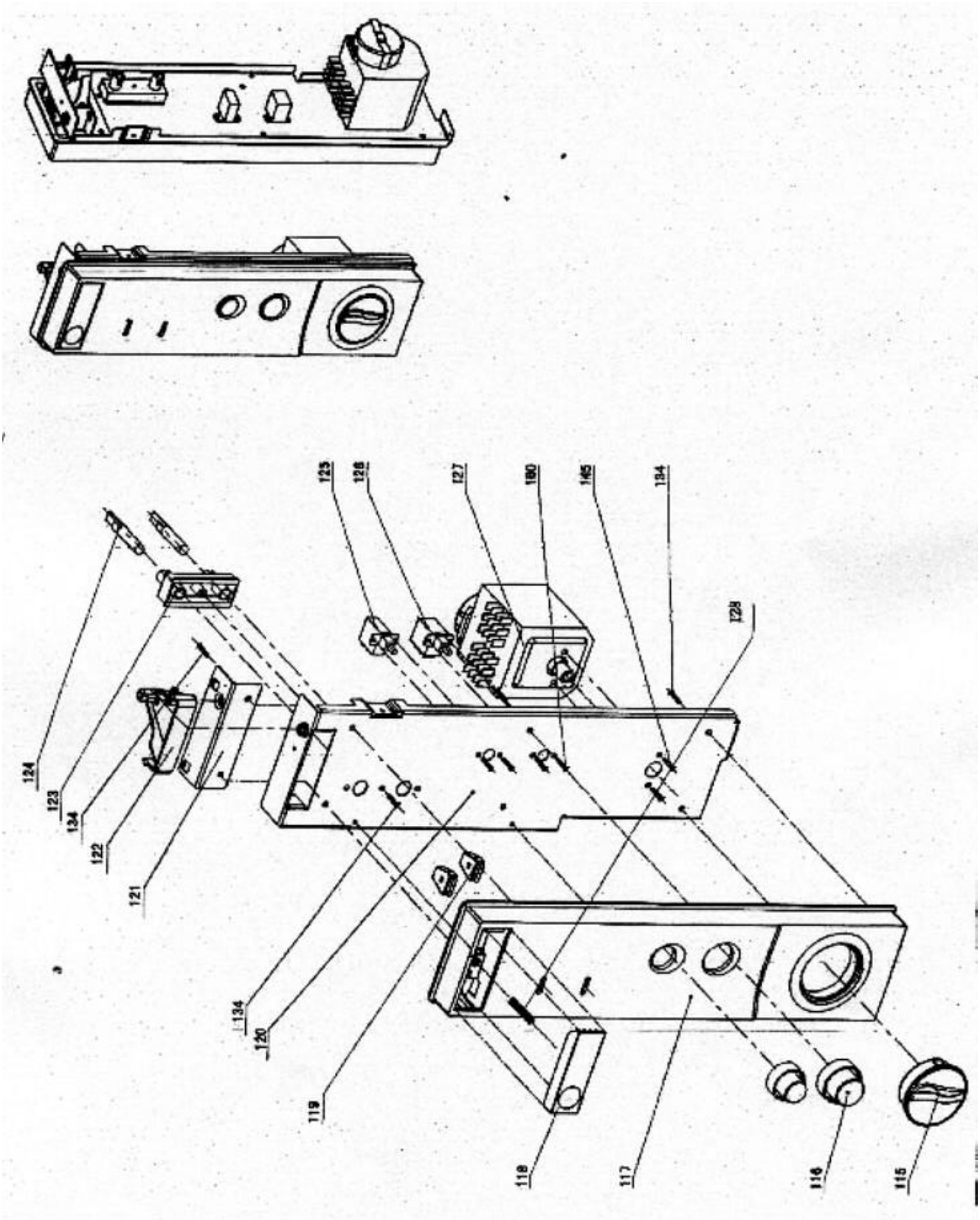

105
104
103
137
102
101

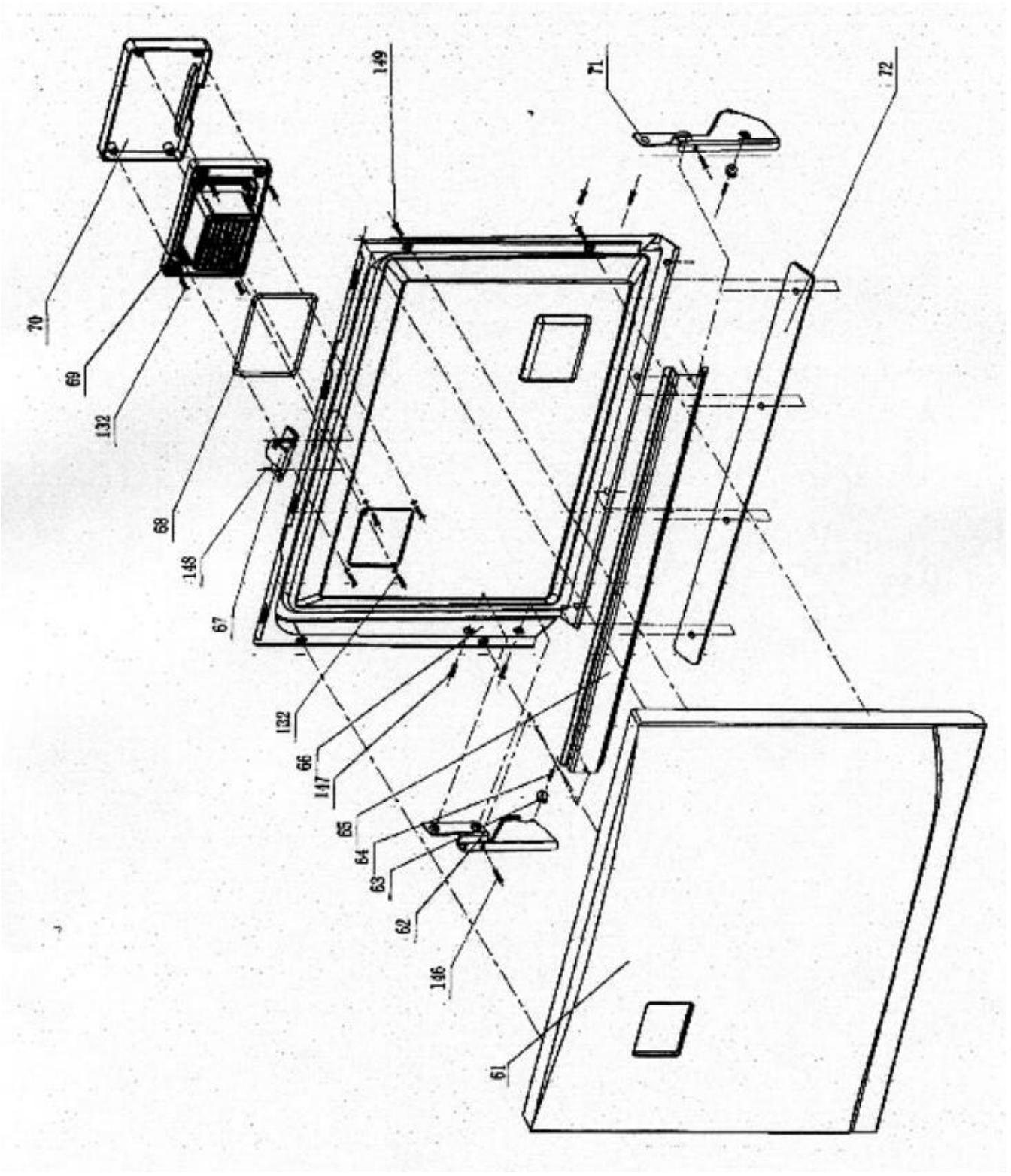


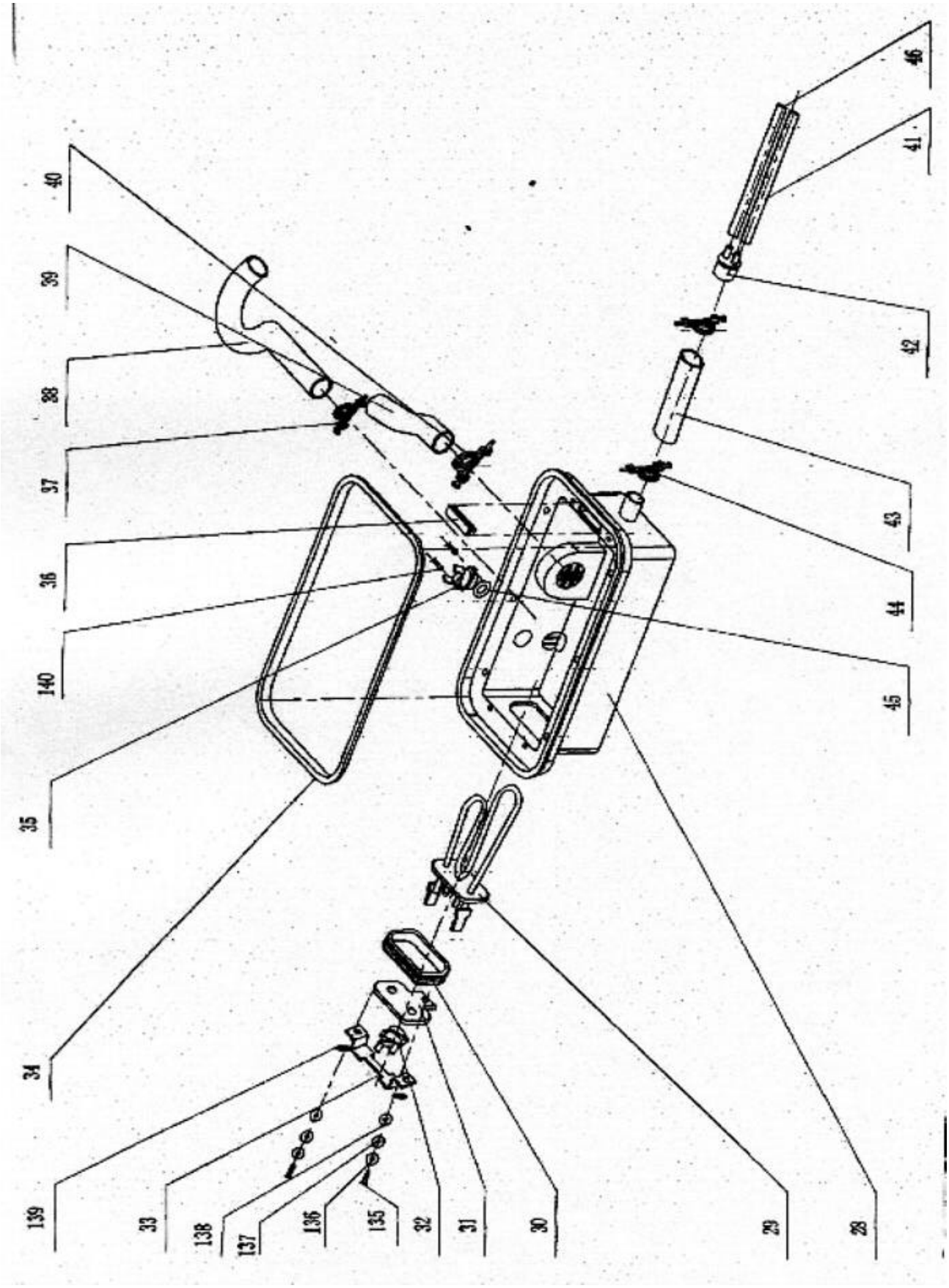

20
134
1129
19
133
18
17
22
16
15
23
24
25
26
135
136
137
138
27


113
112
129
158
114
134
129
182
111
110
109
136
158
130
106
138
137
136
135
107
157
108


151
82
152
89
83
84
81
87
80
86
88
179
78
181
180
179
150
77
76
75
74
73


123
128
127
180
145
134
129
124
123
134
122
121
134
120
119
118
117
116
115


149
71
72
70
69
132
68
148
67
132
66
147
65
64
63
62
146
61


46
41
40
39
42
38
37
43
36
44
140
45
35
34
139
33
138
137
136
135
32
31
30
29
28